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EXAMINER	
BHATTACHARYA, SAM	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/848,749	ZEKAVAT, SEYED A.	
	Examiner	Art Unit	
	Sam Bhattacharya	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-19 and 21-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-19 and 21-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *see attached*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (2002/0167444) in view of Corbett (US 6934546).

Regarding claim 1, Lee discloses a system and method of locating targets 501 via a base station 502, the method including transmitting a first wireless signal from the base station at a first time; receiving the first wireless signal at the target; transmitting a second wireless signal from the target in response to receiving the first wireless signal; receiving the second wireless signal at the base station at a second time; determining a time difference by TOA unit 504 between the first time and the second time; determining an angle of arrival of the second wireless signal; and locating the target based on the angle of arrival and the time difference. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station and that the target is an immobile target. However, in an analogous art, Corbett discloses a system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. See col. 5, lines 18-42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

modify the system in Lee by incorporating this teaching in Corbett for the purpose of acquiring relative locations and velocities.

Regarding claims 4 and 8, Lee discloses that transmitting the first wireless signal including providing a carrier frequency between about 2 GHz and about 3 GHz, since communications in this frequency range is carried out between base stations and mobile stations.

Regarding claim 5, Lee discloses that receiving the second wireless signal includes receiving the second wireless signal at least one of an antenna array and a rake receiver array. See paragraph 47.

Regarding claim 6, Lee discloses that the dynamic base station is stationary (since the base station is fixed). See FIG. 5.

Regarding claim 7, Lee discloses that transmitting the first wireless signal includes transmitting the first wireless signal using at least one of a long term fading technique, and short term fading technique, since signal fading is an inherent property of wireless signals.

Regarding claim 9, Lee discloses beamforming the second wireless signal, since the mobile transmits directly to the base station.

Regarding claim 10, Lee discloses that transmitting the first wireless signal includes omni-directionally transmitting the first wireless signal, since the signal is broadcast by the base station.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Corbett and Carlsson et al. (US 6,167,240).

Regarding claims 2 and 3, the combination of Lee and Corbett fails to disclose that transmitting the first wireless signal includes generating an identification request; and modulating the identification request with a CDMA access scheme.

However, in an analogous art, Carlsson discloses transmitting a signal from a base station to a mobile station generating an identification request modulated on a CDMA access scheme. See FIGS. 1 and 4, col. 5, lines 9-33 and col. 6, line 27 – col. 7, line 15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Corbett by incorporating this teaching in Carlsson for the purpose of determining whether the mobile station is an authorize mobile station in the system.

4. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Corbett and Corbett et al. (US 6,934,546).

Regarding claim 11, the combination of Lee and Corbett fails to disclose that determining a time difference includes determining velocities of both the mobile and the dynamic base station.

However, in an analogous art, Corbett discloses determining a time difference by determining the relative velocities of mobile and base station. See col. 5, lines 18-42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Corbett by incorporating this teaching in Corbett for the purpose of projecting the mobile station's likely trajectory based on its current position and velocity.

5. Claims 12 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Corbett and Ho et al. (US 6,025,799).

Regarding claim 12, Lee discloses a method of locating a target from a base 502, wherein the base has an omni-directional means (broadcast antenna) for transmitting a base wireless signal, and an antenna array means (see paragraph 47) for receiving a target signal and capable of determining a reception angle of the target signal by AOA unit 505, the method including omni-directionally transmitting the activating signal from the omni-directional means at a first time; receiving the target wireless signal at the antenna array means at a second time; determining from the antenna array means the reception angle of the target signal; comparing the first time with the second time to obtain a signal travel time; and locating the target based on the signal travel time and the reception angle of the target signal. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station. However, in an analogous art, Corbett discloses system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee by incorporating this teaching in Corbett for the purpose of acquiring relative locations and velocities.

The combination of Lee and Corbett fails to disclose activating the transponding means at the target in response to receiving the activating signal; transmitting a target signal from the transponding means after the transponding means has been activated.

However, in an analogous art, Ho discloses activating the transponding means at the target vehicle in response to receiving the activating signal and transmitting a target signal from the transponding means after the transponding means has been activated. See FIG. 2 and col. 4, lines 28-64. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Corbett by incorporating this teaching in Ho for the purpose of automatically responding to a request signal sent from the base station.

Claim 15 incorporates the limitations of claims 4 and 12, and is therefore rejected for the same reasons as these claims.

Claim 16 incorporates the limitations of claims 5 and 12, and is therefore rejected for the same reasons as these claims.

Claim 17 incorporates the limitations of claims 7 and 12, and is therefore rejected for the same reasons as these claims.

Claim 18 incorporates the limitations of claims 8 and 12, and is therefore rejected for the same reasons as these claims.

Claim 19 incorporates the limitations of claims 9 and 12, and is therefore rejected for the same reasons as these claims.

Claim 20 incorporates the limitations of claims 6 and 12, and is therefore rejected for the same reasons as these claims.

6. Claims 12, 13 and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Corbett and Ho et al., and further in view of Carlsson et al.

Regarding claim 21, Lee discloses a method of locating a selected one of a plurality of targets 501 from a dynamic base 502, the method including transmitting a wireless activating signal from the dynamic base at a first time; receiving the wireless signals at the dynamic base at a plurality of arrival times; determining a reception angle of the wireless signal of the selected target by AOA unit 505; comparing the first time with the arrival time of the wireless signal of the selected target to obtain a time difference; and locating the selected target based on the time difference and the reception angle. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station. However, in an analogous art, Corbett discloses system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. See col. 11, lines 29-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee by incorporating this teaching in Corbett for the purpose of acquiring relative locations and velocities.

The combination of Lee and Corbett fails to disclose activating the transponding means at the target in response to receiving the activating signal; transmitting a target signal from the transponding means after the transponding means has been activated.

However, in an analogous art, Ho discloses activating the transponding means at the target vehicle in response to receiving the activating signal and transmitting a target signal from the transponding means after the transponding means has been activated. See FIG. 2 and col. 4, lines 28-64. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Corbett by incorporating this teaching in Ho for the purpose of automatically responding to a request signal sent from the base station.

The combination of Lee, Corbett and Ho fails to disclose comparing the unique mobile signature of each wireless signal with a known unique mobile signature of the selected mobile and identifying the wireless signal of the selected mobile based upon a match between the known unique mobile signal and the unique mobile signal of one of the wireless signals.

However, Carlsson discloses these features in FIGS. 1 and 4, col. 5, lines 9-33 and col. 6, line 27 – col. 7, line 15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee, Corbett and Ho by incorporating this teaching in Carlsson for the purpose of determining whether the mobile station is an authorize mobile station in the system.

Claim 13 incorporates the limitations of claims 2 and 12, and is therefore rejected for the same reasons as these claims.

Claim 14 incorporates the limitations of claims 3 and 12, and is therefore rejected for the same reasons as these claims.

Claim 22 incorporates the limitations of claims 2 and 21, and is therefore rejected for the same reasons as these claims.

Claim 23 incorporates the limitations of claims 3 and 21, and is therefore rejected for the same reasons as these claims.

Claim 24 incorporates the limitations of claims 4 and 21, and is therefore rejected for the same reasons as these claims.

Claim 25 incorporates the limitations of claims 5 and 21, and is therefore rejected for the same reasons as these claims.

Claim 26 incorporates the limitations of claims 7 and 21, and is therefore rejected for the same reasons as these claims.

Claim 27 incorporates the limitations of claims 8 and 21, and is therefore rejected for the same reasons as these claims.

Claim 28 incorporates the limitations of claims 9 and 21, and is therefore rejected for the same reasons as these claims.

Claim 29 incorporates the limitations of claims 6 and 21, and is therefore rejected for the same reasons as these claims.

Response to Arguments

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (571) 272-7917. The examiner can normally be reached on Weekdays, 9-6, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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